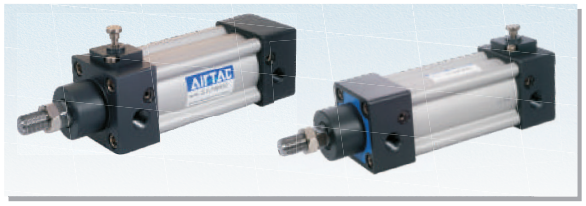
ISO15552 Standard cylinder

SIL Series(Lockable type)



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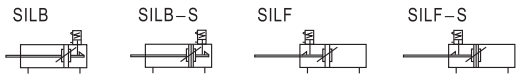
Symbol

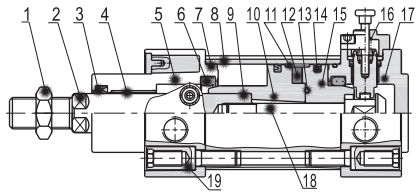


Product feature

1. Lockable cylinders can be divided into two types: front cover lock type and back cover lock type.
2. Unlock method: automatic and manual.

Inner structure and material of major parts

SILB-S



NO.	Item	Material
1	Rod nut	Carbon steel
2	Piston rod	Carbon steel with 20 μ m chrome plated
3	Front cover packing	NBR
4	Bushing	Wear resistant material
5	Front cover	Aluminum alloy
6	Cushing O-ring	NBR
7	O－ring	NBR
8	Barrel	Aluminum alloy
9	Piston rod O-ring	NBR
10	Magnet holder	Aluminum alloy
11	Wear ring	Wear resistant material
12	Magnet	Plastic(Φ100 or below)\Rubber(other)
13	O-ring	NBR
14	Piston seal	NBR
15	Piston	Aluminum alloy
16	Lock combination	
17	Back cover	Aluminum alloy
18	Bolt	Carbon steel
19	Tie-rod nut	Carbon steel

Ordering code

Model can to be changed Ordering code. Example:
Production type: SIL
Lock location: Lock located back cover
Bore size: 160mm
Stroke: 500mm
Magnet: With magnet
Mounting type: LB
Thread type: NPT

Model: SIL B－160 × 500－S－FA－T

Ordering code: SIL B C0 S 0500 FA T

- **Model**
- **Lock location**: B: Lock located back cover; F: Lock located front cover
- **Bore size**: 40：Φ40mm; 50：Φ50mm; 63：Φ63mm; 80：Φ80mm; A0：Φ100mm; B0：Φ125mm; C0：Φ160mm; D0：Φ200mm
- **Magnet**: Blank: Without magnet; S: With magnet
- **Stroke**: In 4 digits
- **Mounting type**
- **Thread type**: P: PT; T: NPT; G: G

Specification

Bore size(mm)		40	50	63	80	100	125	160	200
Acting type		Double acting							
Fluid		Air(to be filtered by 40 μ m filter element)							
Mounting type		Basic FA FB CA CB CR LB TC FTC TCM1 TCM2							
Operating pressure		0.1~1.0MPa(15~145psi)(1.0~10.0bar)							
Proof pressure		1.5MPa(215psi)(15bar)							
Temperature ℃		-20~80							
Speed range mm/s		30~800					30~500		
Stroke tolerance		0~250 $^{+1.0}_{0}$ 251~1000 $^{+1.4}_{0}$ 1001~1500 $^{+1.8}_{0}$							
Cushion type		Variable cushion							
Adjustable cushion stroke (mm)	No lock end	27	30		36		40	50	
	With lock end	15	13.5	16	19.5	20	23	27	
Port size ①		1/4"		3/8"		1/2"		3/4"	

① PT thread, NPT thread and G thread are available.
Add) Refer to P403~426 for detail of sensor switch.

Stroke

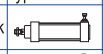
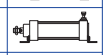
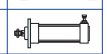
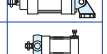
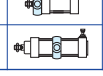
Bore size (mm)	Standard stroke (mm)	Max. std stroke	Max. stroke
40	25 50 75 80 100 125 150 160 175 200 250 300 350 400 450 500 600 700 800	1200	1800
50	25 50 75 80 100 125 150 160 175 200 250 300 350 400 450 500 600 700 800 900 1000	1200	1800
63	25 50 75 80 100 125 150 160 175 200 250 300 350 400 450 500 600 700 800 900 1000	1500	1800
80	25 50 75 80 100 125 150 160 175 200 250 300 350 400 450 500 600 700 800 900 1000	1500	1800
100	25 50 75 80 100 125 150 160 175 200 250 300 350 400 450 500 600 700 800 900 1000	1500	1800
125	25 50 75 80 100 125 150 160 175 200 250 300 350 400 450 500 600 700 800 900 1000	1500	1800
160	25 50 75 80 100 125 150 160 175 200 250 300 350 400 450 500 600 700 800 900 1000	1500	2000
200	25 50 75 80 100 125 150 160 175 200 250 300 350 400 450 500 600 700 800 900 1000	1500	2000

Note) Consult us for non－standard stroke.

Explain of model

SIL B－160 × 50－S－□－P

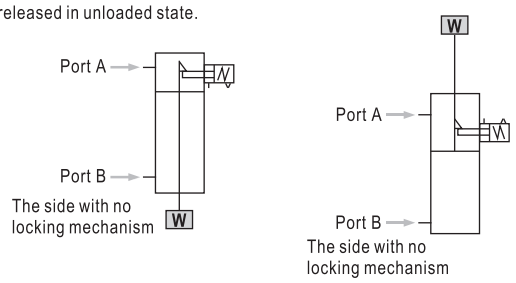
- **Model**: SIL: Double acting with lock type
- **Lock location**: B: Lock located back cover; F: Lock located front cover
- **Bore size**: 40 50 63 80 100 125 160 200
- **Stroke**: Refer to stroke table for details
- **Magnet**: Blank: Without magnet; S: With magnet
- **Thread type**: P: PT; T: NPT; G: G
- ① **Mounting type**

	Mounting type	Available series	Memo
Blank		SILB SILF	
LB			
FA			
FB			
CA			
CB			
CR			Be used with CB
FTC			Be used with TCM1 TCM2
TC			

① Please refer to page 192~194 for accessory parts.

The Operation Manual and Maintenance

1. In locked state, if pressure is supplied to the port A when both ports are under no force, either the lock's not being released or being released abruptly may cause the flying out of the piston rod. Before the lock being released, please make sure pressure is supplied to the port B and the locking mechanism is released in unloaded state.



2. If a rapid exhaust valve is used to accelerate the descending speed, the cylinder body may move earlier than the lock pin, and the lock will not be released normally. Therefore, the lockable cylinder can not be used with a rapid exhaust valve.

3. Please do not integrate with 3 port solenoid valve:
Please do not integrate with 3 port solenoid valve (especially with metal mid-sealing style). The lock will not work if there is pressure in the port on the lock mechanism side. In addition, even if the cylinder is locked temporarily, the air leaking out of the solenoid valve will entry the cylinder and the lock mechanism is released.

4. The lock may be released if locking mechanism side bears back pressure. Therefore, it is recommended to use an individual exhaust type manifold or individual valves.

5. Regarding an adjustable buffered cylinder, the piston may be restrained at the end of the stroke and cause damage to the lock mechanism if the needle of the cushion valve is over used. Therefore, the needle valve should be adjusted so that the piston may not be restrained.

6. When manual operation to the lock mechanism is over, make sure the manual operation device is placed to the root position. In addition, it is dangerous to proceed the manual operation beyond adjustment time.

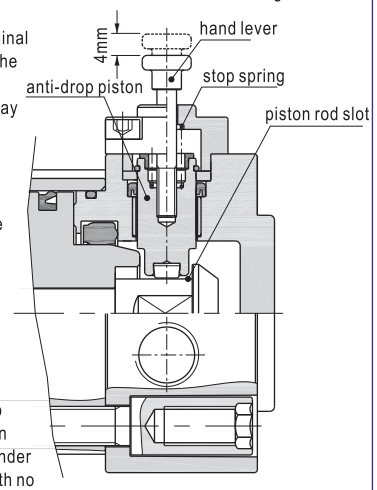
7. Release the lock before installation and adjustment of the cylinder:
Operations like installation under locked state may cause damage of locking part.

8. Do not use more than one cylinder:
One workpiece cannot be driven 2 or more than 2 lockable cylinders because the other locks may not be released.

9. Please use speed control valve in exhaust throttle controlling state:
The lock may not be released in air suction and throttle controlling.

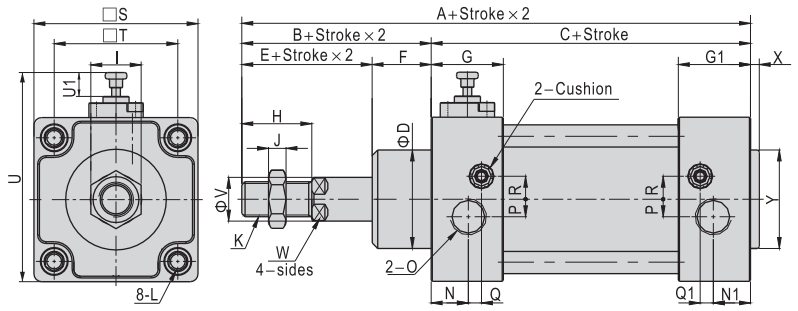
10. Make sure the stroke terminal of the cylinder is used on the locking mechanism side:
The locking mechanism may not work or released if the piston does not reach the stroke terminal.

11. Ways to manually alter the unlocked state:
Screw the hand lever into the anti-drop piston and pull out the bolt of 4mm with a force more than 20N, the lock can be released after the movement of the anti-drop piston. The piston will be in locked state when the cylinder is installed horizontally with no load or forcing against the opposite port or the anti-drop piston replaced to the root position and enter into the piston rod slot with the function of stop spring.

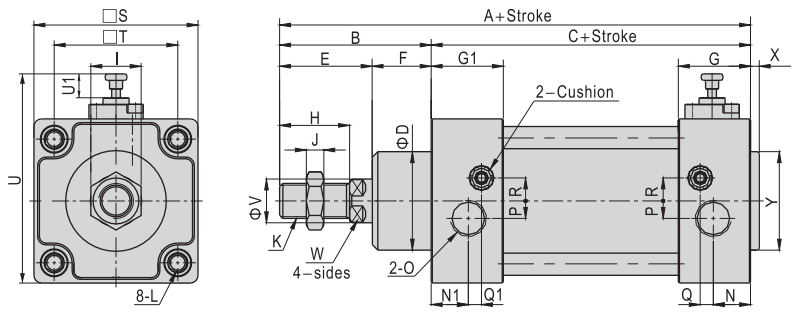


Dimensions

SILF



SILB



Bore size\Item	A	B	C	D	E	F	G	G1	H	I	J	K	L
40	159	54	105	35	32	22	32	32	24	17	7	M12×1.25	M6
50	175	69	106	40	42	27	31	31	32	23	8	M16×1.5	M8
63	190	69	121	45	40	29	33	33	32	23	8	M16×1.5	M8
80	220	86	134	45	53	33	39	33	40	26	10	M20×1.5	M10
100	231	91	140	55	55	36	39	37	40	26	10	M20×1.5	M10
125	279	119	160	60	74	45	46	46	54	41	13.5	M27×2.0	M12
160	332	152	180	65	94	58	50	50	72	55	18	M36×2.0	M16
200	347	167	180	75	100	67	50	50	72	55	18	M36×2.0	M16

Bore size\Item	N	N1	O	P	Q	Q1	R	S	T	U	U1	V	W	X	Y
40	18	16	1/4"	6	6.5	8.5	9	53	38	74	10	16	13	3.5	35
50	18.5	15.5	1/4"	8.5	4.5	7.5	7.5	65	46.5	86	10	20	17	3.5	40
63	18	16.5	3/8"	7.5	7	8.5	9	75	56.5	96	8	20	17	4	45
80	22.5	16.5	3/8"	11	8.5	8.5	13.5	95	72	117	8	25	22	4	45
100	22.5	18.5	1/2"	13.5	7.5	9.5	14.5	115	89	137	8	25	22	4	55
125	23	23	1/2"	14	12	12	14	140	110	172.5	18.5	32	27	4	60
160	25	25	3/4"	15	13	13	20	180	140	212.5	18.5	40	36	4	65
200	25	25	3/4"	15	12	12	20	220	175	252.5	18.5	40	36	5	75

Remark: The dimensions of magnet type cylinder are the same as non-magnet type cylinder.

SIL